

# Virtual Reality and Psychedelic Synergy

Study finds that these altered states are quite similar.

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In the psychedelic sixties, [Timothy Leary](#) chanted “Turn on, Tune in, Dropout”. By the end of the twentieth century, however, Leary adjusted his well-known catchphrase to changing times and evolving technology: “Turn On, Boot Up, Jack In,”<sup>1</sup> he said, arguing that *cyberdelics*—the union of cyberculture with psychedelic substances—had the capacity to birth a new paradigm. Similarly, psychedelic spearhead [Terence McKenna](#) aptly said that the psychedelic substances of the future would be more like computers, and the computers of the future would be more like psychedelics.

Both luminaries foreshadowed a future where psychedelics and technology would merge, birthing a novel modality and new terrains to be explored. It seems as if that time has come, with new research highlighting the many similarities between psychedelic experiences and Virtual Reality (VR) and detailing the potential therapeutic and recreational implications. In a recent article entitled “Psychedelics and Virtual Reality: Parallels and Applications,” published in *Therapeutic Advances in Psychopharmacology*, Aday, Davoli and Bloesch offer a comprehensive literature review of the topic, and speculate on a future where psychedelics and technology are one.<sup>2</sup>

## Altered States and Awe-Inducing Experiences

As the study notes, psychedelic experiences and virtual reality have the common ability to alter perceptual experience, particularly visual processing. [DMT](#) is an emblematic example. As demonstrated by Alamina, et. al., participants in their study with eyes closed and under the influence of DMT showed patterns in cortical electroencephalogram (EEG) remarkably similar to those of controls with eyes open.<sup>3</sup> Individuals undergoing a psychedelic experience having similar EEGs to controls at baseline speaks to DMT’s ability to “replace ongoing mental experience” as DMT researcher [Rick Strassman](#) says.<sup>4</sup>

This capacity to immerse the user in a hallucinatory landscape is similar to VR technology, in which users find themselves immersed in a wholly artificial environment. The qualitative experience of transcending limitations proposed by the physical body and consensus reality is

often expressed.<sup>5</sup> A common motivation for using DMT is a general curiosity of and a desire to explore visual phenomena<sup>6</sup>, which may likewise be true for VR enthusiasts.

Immersive doses of psychedelics and VR possess the mutual capacity to evoke awe, an emotion equal parts fear and reverence. This may be beneficial in therapeutic contexts. Experiences of awe reported in psychedelic states have been positively correlated with a sense of heightened curiosity, improvements in mental health, and enhanced performance in school or at work.<sup>7,8</sup> Similarly, VR is a reliable tool in facilitating emotionally significant experiences. Chirico, Ferrise, Cordella, et al. found that exposure to awe-inducing virtual environments was associated with increased wellbeing and a perceived sense of “vastness and connectedness.”<sup>9</sup> These outcomes are strikingly similar to the emotional and personal effects reported after psychedelic experiences.

## Mapping Uncharted Territory

Research into psychedelic science has accelerated steadily, particularly since 2018 when psilocybin was granted breakthrough therapy status by the FDA as a potential remedy for Treatment-Resistant Depression (TRD).<sup>10</sup> As this body of work is elaborated upon, VR may prove beneficial as an adjunct to the new psychedelic-assisted therapies currently in their infancy. A vast body of literature has accumulated using psychedelics to treat various ailments including depression,<sup>11</sup> anxiety,<sup>12</sup> end-of-life distress,<sup>13</sup> and substance misuse.<sup>14</sup> Evidence consistently suggests that these substances can facilitate remission in a vast array of afflictions.

While it has become increasingly established that psychedelics confer obvious benefits, how this happens exactly and how their actions are mediated is not fully understood. With the onslaught of modern literature, ideas ranging from the content of mystical experiences<sup>15</sup> and that of ego dissolution<sup>16</sup> have been proposed, in addition to mechanistic explanations like neurogenesis<sup>17</sup> and changes in neural plasticity.<sup>18</sup> Recently, a hampering in the activity of the brain’s default mode network has become a popular framework.

In addition to improving our understanding of psychedelics with regards to basic science, VR may have many purely therapeutic benefits of its own. VR has been studied as a potential treatment for many of the same ailments as psychedelics, a unique opportunity to survey the effects of utilizing both in tandem. Like psychedelics, VR has been proposed as a remedy for anxiety,<sup>21</sup> depression,<sup>22</sup> and substance misuse,<sup>23</sup> among other disorders. It has also been used in bed-ridden individuals to simulate travel, illustrating that VR and psychedelics together may be especially helpful in the palliative care of the sick and those at the end of life.<sup>24</sup>

Virtual environments also provide immersive settings in which individuals can confront fears and/or facilitate memory reconsolidation of events or prospects that may frighten them, aiding in the construction of new associations and alternate perceptions.<sup>25</sup> Subjective ratings of “presence” and “immersion” in virtual settings correlate with many positive outcomes when used alongside psychotherapy, suggesting that transcending one’s typical perspective is important in VR’s therapeutic efficacy.<sup>26</sup> This presents yet another unique opportunity to study its use alongside psychedelics.

## **Conclusion**

Long after Leary and McKenna's speculations, Aday, Davoli, and Bloesch's research echoes a similar sentiment, but in a more modern and nuanced sense. This comprehensive review reiterates the potential of using VR technology as an adjunct to psychedelic therapies. This synergy could have far-reaching implications, both in the therapeutic and recreational use of psychedelics. VR used in tandem with psychedelic substances may be an entirely new direction for psychedelic research, medicine, and for the study of consciousness generally.

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